

[0082] What is claimed is:

1. An apparatus comprising:

a variable acoustic source acoustically coupled to a volume, the volume being divided into an air region and a fluid region, the fluid region having a fluid output;

a microphone acoustically coupled to the volume;

a processor configured to receive a signal from the microphone, and further configured to determine a volume of the air region;

a fluid valve configured to allow an amount of fluid to exit the fluid region, the amount of fluid being associated with the determined volume of the air region, and wherein the processor is further configured to send a control signal to the fluid valve;

a target region coupled to the fluid valve and in selective communication with an air tank through an air valve and wherein the fluid valve and the air valve are positioned so that a substantial portion of the fluid exits the target region; and

an atomizer coupled to the fluid output, the atomizer configured to aerosolize at least a portion of the amount of fluid to exit the fluid region..

2. An apparatus comprising:

a processor configured to calculate a fluid volume and to output a volume signal associated with the calculated fluid volume;

a fluid valve configured to allow an amount of fluid to exit the fluid region, the amount of fluid being associated with the calculated fluid volume, and wherein the processor is further configured to send a control signal to the fluid valve;

a target region coupled to the fluid valve and in selective communication with an air tank through an air valve and wherein the fluid valve and the air valve are positioned so that a substantial portion of the fluid exits the target region.

3. The apparatus of claim 2, wherein the target region is in communication with an atomizer.

4. The apparatus of claim 3, further comprising:

a light source and light detector, the detector configured to output a signal associated with light scattering from the aerosol;

a configured to output a signal associated with a flow rate of the aerosol; and

wherein the calculation of the aerosol volume is associated with the output signal from the light detector and with the output signal from the pressure sensor.